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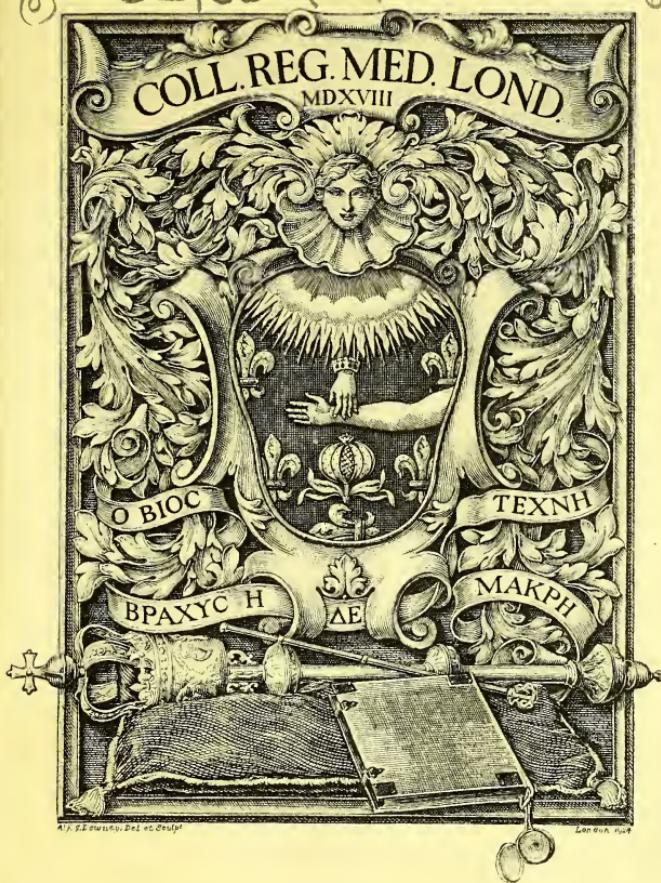
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A CASE

OF

MELANOSIS,

WITH GENERAL OBSERVATIONS ON THE PATHOLOGY

OF THIS

INTERESTING DISEASE.

By THOMAS FAWDINGTON,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON, AND ONE
OF THE SURGEONS TO THE MANCHESTER LYING-IN-HOSPITAL.

ILLUSTRATED BY COLOURED LITHOGRAPHIC PLATES.

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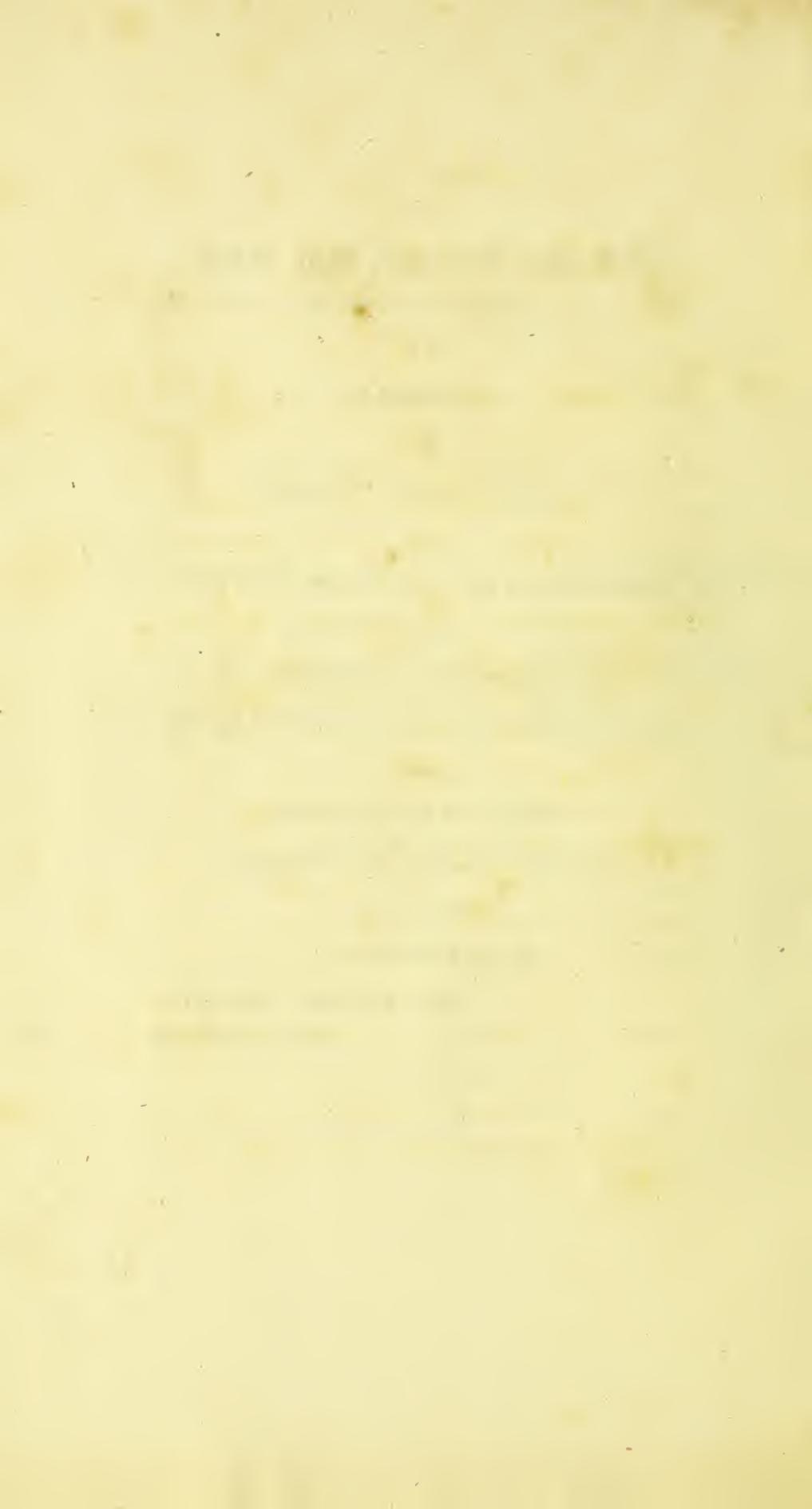
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TO
EDWARD HOLME, M.D. F.L.S.
SENIOR PHYSICIAN TO THE MANCHESTER INFIRMARY, &C. &C.
AS A
MEMORIAL
OF
GRATITUDE FOR HIS FRIENDSHIP
AND
ADMIRATION OF HIS TALENTS AND ERUDITION,
AND IN
ACKNOWLEDGMENT OF SERVICES THE
MOST ESTIMABLE THAT MAN CAN CONFER ON MAN,
THIS
ATTEMPT TO ILLUSTRATE AN
OBSCURE SUBJECT OF PATHOLOGY,
IS INSCRIBED
BY HIS FAITHFUL
AND DEVOTED SERVANT,
THE AUTHOR.



ADVERTISEMENT.

THE following case was originally drawn up and destined for insertion in one of the periodical journals; but owing to the suggestions of some of my professional friends, upon whose judgment I am inclined to place great reliance, it has assumed its present form. Indeed the inadequacy of mere verbal description to convey an accurate notion of morbid appearances, together with the interesting peculiarity of the disease which it is my object to illustrate, constitutes a sufficient apology for the addition of coloured plates, and consequently, for what might otherwise be deemed an unnecessary mode of publication. I am not aware that any other graphic illustrations of Melanosis have been attempted, if we except a single engraving which is contained in Alibert's splendid work entitled " Nosologie Naturelle".

To my intelligent pupil Mr. J. A. Smith, of Nottingham, I am indebted for the drawings from which the plates are taken, and Mr. James, an ingenious artist in Manchester, has executed them on stone in a manner, as a first essay, highly creditable to his talents. The colouring has been conducted under my own superintendence; and I trust I shall not be deemed arrogant in asserting that the whole appears to convey as correct and faithful a representation of the subject as is compatible with the perfection of the art.

As a writer I have no pretensions; my wish is simply to be perspicuous and intelligible, and if in this aim I shall not have failed, and these few pages shall be regarded as a not altogether useless contribution to pathological Science, I shall feel well satisfied with the undertaking, and shall be amply repaid in having brought more distinctly before the eyes of the profession, a disease, of which the tangible features are not, even yet, familiarly known.

A CASE OF MELANOSIS, &c.

THE disease, which is designated by the term Melanosis, has but recently attracted the notice of the medical world; and though some equivocal traces of it are to be found in the celebrated works of Morgagni, Bonetus, and Haller, it was left to the pathologists of our time to describe and treat of it as a distinct and peculiar disorganization; and for the knowledge we now possess, limited as it is, we are indebted chiefly to the labours of our continental brethren. In the beginning of the present century, M. M. Bayle and Laennec, published the result of their investigations upon this intricate subject, and thus first drew the attention of the profession to it. But it would appear from a controversy

which arose on that occasion, that M. Dupuytren had, many years previously, met with, and described the disease, in his Lectures, which were then delivered at the School of Medicine in Paris. Since this period, a few cases have been contributed to the French periodical journals; and I would refer particularly to an article on Melanosis by M. Breschet, inserted in Magendie's "Journal de Physiologie" for October, 1821. In our own country this disease appears to have been repeatedly noticed, and hence is not of very unfrequent occurrence; for besides three or four cases recently published under its appropriate designation, some have been described, at a remoter period, as instances of a modified form, or a species of Fungus Hæmatodes. No where, however, has Melanosis been observed presenting a more complete and unmixed character than in the case which occupies the following pages, and which I shall now proceed to delineate.

The morbid process first shewed itself in the eye, and the individual was at that time

placed under the judicious management of my able and esteemed friend, Mr. Wilson, Senior Surgeon to the Manchester Eye Institution, from whom I have been favoured with the following communication.

MY DEAR SIR,

I have great pleasure in sending you a copy of my notes relative to the case of Thomas Peckett.

I have no doubt that the globe of the eye is more frequently the seat of melanose deposit than has been suspected, and I imagine that some of the cases related by Mr. Ware and others, under the appellation of cancer of the eye-ball, may be considered as melanosis. The propriety of ever removing such a disease may be fairly questioned, but I may remark that two years ago I removed the eye-ball of a middle aged man affected with melanosis; and I entertained sanguine hopes that no other organ would become affected, as such an interval had elapsed; but last week he called upon me, complain-

ing of great general debility, loss of flesh, and mentioned that he had experienced frequent discharges per anum of a dark coloured fluid. Upon examining the orbit from which the globe had been removed, I perceived upon the granulations a portion of black matter, the size of a currant, of a pyriform shape. He said he had at times lost some blood from the orbit, but very trifling in quantity. Upon dividing the peduncle, two or three drops of dark blood, if blood it can be called, issued from the wound. The case is still under my observation, and I hope, at some future time, to be enabled to communicate it to the profession.

With much regard, believe me,

My dear Sir,

Your's truly,

W. J. WILSON,

Mosley-Street,

June 21, 1825.

L

A Copy of Mr. Wilson's Notes.

“ In January, 1824, Thomas Peckett, ætat. 30, a robust healthy looking man, and employed as a carder in a cotton factory, consulted me respecting a violent and incessant pain in his left eye. Six months previous to his application, he received a blow upon the organ from the projection of a small piece of iron; but the injury appeared to be of a very trifling nature, as he experienced but little pain, nor did the eye exhibit any external appearance which attracted the notice of those around him.

“ About a fortnight after this accident, he experienced a sensation of fulness in the globe, and upon shutting his right eye discovered that his sight in the left was very imperfect. The pain and dimness gradually increased, the former to a most distressing degree, chiefly affecting the ball of the eye and margin of the orbit.

“ The conjunctival vessels were enlarged and tortuous, beginning to assume the usual fasci-

culated arrangement. The sclerotic coat was generally inflamed and undergoing absorption, the dark choroid being just visible towards the internal canthus. The iris was dilated and immovable, and a slate coloured opacity occupied the centre of the pupil. No symptoms of cerebral affection were manifested.

“ The treatment had been limited to the occasional application of leeches to the temple.

“ By drawing blood freely and repeatedly from the temple and nape of the neck, together with blistering, active cathartics, and an abstemious diet, the pain was removed ; but no amendment in vision ensued. At this, however, he was not disappointed, as I had given him no reason to hope that his sight would be restored. After remaining in Manchester nearly a month, he was permitted to return into Staffordshire.

“ The latter end of March he again applied to me on account of a return of pain. He stated that a few days after he returned home, he had experienced his former sensa-

tions, and the pain was now so violent and incessant as to prevent him sleeping.

“ The disease had made considerable progress, and it was to be feared that the pain he endured was owing to a morbid growth in the globe of the eye. The sclerotic coat at the upper part of the globe and towards the internal canthus, was reduced to an extreme degree of tenuity, the choroid covering the protruding substance. The opaque appearance in the pupil had assumed a dirty red colour, resembling newly organized lymph, and this seemed to be the apex of a conical shaped body situated deep in the bottom of the eye. The former treatment with moderate ptyalism was ineffectually adopted, and on the 19th of April I removed the contents of the orbit.

“ A section of the eye-ball discovered a black pultaceous tumour occupying more than one half the interior of the globe, in the situation of the vitreous humour, of which last named part, no trace could be discovered. There were two cavities or cells filled with a

brownish red fluid, one situated at the side of the tumour, the other anterior to it and behind the lens. No trace of the vitreous cells could be discovered. The tunica choroïdes was entire and could easily be drawn up from the sclerotica, except at one point towards its superior and internal part, where it ceased to be distinguishable from the general mass of the tumour. The sclerotica was here reduced to an extreme degree of tenuity and had a split appearance. The retina was quite detached from the choroid by the interposition of the disease, and laid folded across the globe, forming a kind of septum between the black mass and the larger of the two cavities containing the brownish red fluid. The lens was opaque and of a yellow hue, the capsule thickened, but partially transparent; a fold of retina covered the posterior capsule or that fold of the hyaloid which lines the vitreous fossula for the lodgment of the lens. The ligamentum ciliare was distinct, and some ragged portions of membrane at the margin of the lens and posterior to the iris,

which was perfect, shewed a remnant of the ciliary processes. The optic nerve, where it had been divided at the time of the operation, appeared to be sound.

“ He recovered from the effects of the operation, and returned home at the end of a month apparently well.

“ In the month of August he again applied to me, on account of three or four tumours on the face, about the size of a leaden shot, perfectly black in colour, but unattended by pain or uneasiness. He complained of difficulty of breathing and of stitches in his side, with a short cough. He had evidently wasted in flesh, and his pulse was quick and remarkably sharp. A tumour, similar to those on the face, was discovered upon the skin of the back in the space between the scapulæ. In a few days one or two more were found upon the scalp. He was bled freely from the arm and sent to the Manchester Infirmary, where he was placed under the care of Dr. Holme.”

He remained in the Infirmary about a

fortnight, when, being sensible of no improvement, he requested his discharge, and was placed on the list of Out-patients. But as he resided at some distance, and his strength declined rapidly, his visits were soon discontinued.

On the 2nd of October, the case fell under my observation.* The general aspect of the patient indicates a deficient supply of nutriment, or an imperfect appropriation of it to the purposes of the system. The surface is pale and exsanguineous, and there is a considerable degree of muscular emaciation with oedema of the legs. But the most striking feature of the case is an exceedingly protuberant abdomen, apparently from enlargement of one of its viscera, and this probably the liver. The tumour seems to occupy a great part of the abdominal cavity, reaching from the right to the left side and down to within an inch and a half of the pubes, where

* This account of the symptoms is copied nearly verbatim from my case-book, which, for certain reasons, I prefer giving in this manner.

its margin can be distinctly traced. It has an irregular, tuberculated feel, is firm and unyielding over the principal extent of its surface ; but the prominences of the supposed tubera possess a slight degree of elasticity. Pressure occasions little suffering ; yet the patient complains of transient pains affecting both the chest and belly. He states, that, a few weeks back, he experienced a sharp pain in the left hypochondrium, darting up to the shoulder, which subsided spontaneously in the course of two or three days. He complains of a sense of weight and distension, and, indeed, his chief distress appears to arise from the mechanical influence of the swelling. The breathing is a little restrained, but there is no actual dyspnœa, and the cough which is present scarcely claims the notice of the patient. Posture somewhat affects him ; he expresses himself to be easier, and his respiration freer, leaning forward at a slight angle, than when erect or in a reclining or horizontal position, though he can assume the latter without much in-

convenience. The expectoration is inconsiderable, and what is brought up looks like mucus unchanged. There is less active derangement of the alimentary functions than we should have predicted, reasoning from the rapidity and extent of the hepatic disorganization. The appetite is mostly unimpaired, and the ingesta produce no disturbance to the stomach. A diarrhoea, however, harrasses the patient, but it is unaccompanied by its usual associates; and the dejections, though described as variable, are, at present, sufficiently bilious and by no means ill digested. The secretion of urine is remarkably scanty, and this fluid presents a very peculiar appearance. When emitted, it has an uniform modena red or purple colour; but by allowing it to stand some hours, a chocolate-coloured precipitate forms, leaving the supernatant fluid of a deep amber hue. Neither heat nor the nitric acid produces any visible change upon it.

Little constitutional irritation prevails. The pulse is, indeed, somewhat accelerated, and

the patient complains of transitory febrile paroxysms, which return without any assignable cause, at indefinite periods, and terminate by sweating. The tongue is clean, perhaps morbidly so, and there is some thirst.

The face and scalp display several perfectly developed melanose tubercles, and one, on the lower lid of the extirpated eye, appears to be on the verge of ulceration, if the simple breach of its cuticular and only envelope would constitute such a state. The bottom of the orbit is free from any visible melanose deposition.* In every other situation, excepting two or three points on the trunk, the texture of the cutis has escaped the direct invasion of the disease ; but the subcutaneous tissue, over the whole chest and abdomen, is evidently loaded with the morbid production which characterises melanosis ; giving rise,

* I wish to be understood as applying this word (which is employed for the convenience of description) only to express a certain state, without any reference to the mode in which it is effected.

where the cysts encroach on the skin, to faint blue elevations, more or less distinct, and of various sizes; none, however, exceeding the fourth of an inch in diameter.

As we have no positive indications to guide us towards the cure of melanosis, the treatment directed, in the present instance, is, of course, purely palliative.

October 29th. From the date of the last report, the powers of the system have been gradually declining. The diarrhoea is checked, and the alvine discharges present a tolerably natural appearance; yet the constitutional phenomena are more marked, and begin to put on the regular character of hectic. In addition to his former symptoms, the patient has colliquative sweats, and a pulse constantly above 100. His countenance, too, exhibits a peculiar expression of feebleness. The cough is becoming more troublesome, and there is difficulty of respiration in the recumbent posture. The cutaneous cysts appear to be stationary; but the subcutaneous are on the increase. One of the supposed tubera

of the liver has become so much softened, that I am suspicious of abscess, especially on learning that, a few days ago, the patient experienced a degree of soreness in this point, so considerable, as to be induced to apply leeches. The part still remains tender to the touch. I am mistaken if I do not perceive fluid at the lower part of the abdomen; the fluctuation, however, is very obscure. There is a more copious discharge of urine, which still retains the peculiarities of appearance before described.

November 3rd. Little change took place in the symptoms until last night, when the patient suddenly started from his bed under a feeling of suffocation. It is reported that he gasped and breathed with great effort, perspired profusely, and fell into a state approaching to syncope. After he had somewhat rallied, he expressed a wish to see his friends, stating to the person who was present, that he was convinced, from the oppression and sinking which he felt, that life was at its last ebb. The surface became cold;

great inquietude with jactitation and slight delirium, supervened ; and in three hours from the occurrence of pressing symptoms, poor Peckett expired.

Autopsia Cadaveris. The body was examined nine hours after death. By making an incision from the upper part of the sternum to the symphysis pubis, and throwing back the skin, on each side, we displayed a considerable extent of the cellular and adipose textures, beautifully granulated with melanose matter ; and this, at various intervals, was disposed in masses, up to the size of a small pea, all of which were inclosed in a delicate transparent cyst. Many of the largest were partially embedded in the cutis ; but were held there by such slender adhesions, that the point of the knife easily dislodged them, leaving the cutaneous tissue attenuated, but otherwise unchanged. It is singular that the cellular medium of the subjacent muscles exhibited scarcely a vestige of this deposit. The remainder of the integuments was now

divided, in order to expose the cavity of the abdomen. After clearing away about two quarts of bloody serum and some coagula, which had gravitated to the pelvis, we directed our observation to the liver. This viscus, completely altered in figure, was augmented to at least four times its natural magnitude; extending, laterally, to the utmost limits of the cavity, and effectually concealing the other viscera, except in the hypogastrium, where a few turns of the ilium, covered by omentum, protruded. In some places, its surface was merely undulated; in others, extremely uneven, in consequence of a number of dark blue circumscribed projections, of which the most voluminous would measure four or five inches over the summit to the base. Many of these appeared to be made up of a congregation of smaller tumours; yet, others were independent, and had probably been so from their origin. The intermediate spaces shewed little of the natural hepatic texture; its colour was converted into a faintly reddish brown, speckled with black; and in the sulci

or hollows, caused by the neighbouring prominences, as well as on the surface of the more capacious tubera, the peritoneum was somewhat opaque, and, here and there, rather more vascular than usual, though in no conspicuous degree. The liver was remarkably tender and lacerable, particularly where the disorganization was most complete, so that we could not, without the utmost care, avoid breaking down its structure, in the attempt to separate and remove it. The cause of my suspicions as to abscess, now became explained; for directly opposed to that point of the umbilicus, which was the seat of my observations, we found a large tumour, projecting considerably beyond the rest, with contents sufficiently softened to convey to the finger a sense of fluctuation. It adhered slightly to the adjacent surfaces; but it is remarkable that no other morbid adhesions were discernible throughout the peritoneal cavity. On making a section of the liver, which included one of the principal tubera, several ounces of a homogeneous dark

coloured matter flowed out, bearing a near resemblance, both in look and consistence, to deep chocolate paint. We found that this product had been generated, or at least contained, in slender membranous cysts, of from one to three inches in diameter, with which the substance of the organ was beset, and that the degree of fluidity, which was most elaborated in the centre, seemed to hold a nearly direct relation to the compass of those cysts. There was besides a great number of smaller tumours, consisting of a similar but more compact material ; and these, too, separate or coalescent, were for the most part, bounded by a well defined cyst. In some situations, however, there was a *partial* transmutation of the parenchyma of the liver, within a circumscribed space, which appeared to be determined by the simultaneous formation of a membranous boundary, as will be seen by referring to Plate 4. In others, again, the black matter was disposed interstitially, and in a diffused manner, so as to be intermingled and confounded with the

surrounding substance ; and, indeed, the whole remaining hepatic structure, which was cognizable as such, betrayed a strong tincture of melanose disposition, presenting a light brown or clay coloured ground, interspersed with innumerable dark blackish points.

The gall-bladder was almost buried in the disease ; yet it contained its ordinary quota of fluid, in no way distinguishable from healthy bile, and its coats appeared free from any morbid deposition.

We found the peritoneum lining the walls of the abdomen pretty generally marked with the disease ; immediately, in the form of minute dots ; and from proximity with the subjacent cellular tissue, in which case, the membrane was thinned, and formed but a partial envelope to small rounded tubercles, similar to what were observed in the skin. The peritoneum was elsewhere comparatively exempt from melanosis ; although the reticular tissue, which united it to the subjacent structures, and connected its duplicates, was universally pervaded by it. Along the sides

of the spine in the course of the sympathetic ganglia; upon the concave surface of the diaphragm; in the adipose texture embedding the kidneys and their vessels; between the layers of the mesentery and mesocolon; and in the omentum, there was an abundant distribution of black matter, assuming various shapes, but, principally, granular and ovoid.

The pancreas, spleen, and kidneys were thickly studded with melanose bodies, some of which, especially in the pancreas, had attained the size of a spanish nut; and we observed several patches of the same deposition beneath the serous tunic of the stomach and intestines. The former viscera were slightly increased in bulk, but preserved their respective organic characters; excepting the kidneys which were paler than usual, and in which, more particularly near the centre, the cortical and tubular divisions merged in one apparently similar structure, and this deviating from the healthy cortical only in having a weaker cohesion. At one extremity of the gland, the tubular substance looked natural;

and this was the only part where melanosis had not intruded itself.

We could distinguish no traces of the disease in the nervous textures submitted to examination; viz. the sympathetic and semilunar ganglia, and the trunks of the anterior crural and great sciatic nerves.

The vessels, too, were free from the taint of melanosis; of which, were inspected the aorta and vena cava with their principal divisions.

What was the nature of the lesion, which had given rise to the extravasation of blood before alluded to, we could not ascertain; for the circumstances, under which the inspection was conducted, precluded the adoption of any minute steps to determine this and some other desirable points.

The thorax was next examined. On raising the sternum, of which the posterior surface was superficially spotted, we met with a considerable quantity of melanose tubercles lying in the cellular texture of the anterior mediastinum; but they abounded most on the

exterior of the pleura costalis. On the inner surface of this membrane, as well as the pericardium, the deposit had assumed a different arrangement, being striated and so decidedly interstitial, as to form no perceptible elevation or irregularity when the finger was passed over it. The pleura investing the lungs was affected in another manner; a great number of circular or oval flattened tubercles, included in a fine transparent cyst, and attached by a slender hair-like pedicle to the subjacent membrane, was seen lying upon these organs, being congregated in some places, so as to resemble clusters of dried currants, and in others, apart and insulated, in which the filamentous attachment was especially observable. This portion of the pleura was likewise dotted interstitially, and was a little raised by the melanose bodies situated beneath it. The pulmonary substance was crepitous and had undergone no other change than in being the seat of a lightly scattered deposition, which imparted to it a carbonaceous appearance; and, here and there,

though not in large quantity, the matter of melanosis was distributed in an encysted form. In no part of the chest were there any unnatural adhesions; nor did the cavities contain more than perhaps three ounces of a limpid serum. The trachea and its bifurcations presented no traces of the disease.

Almost the whole surface of the heart was covered by melanose spots; some of which were raised, some implicating purely the texture of its investing membrane, and others again were evidently subjacent to that membrane; but none were pendent, as on the pleura pulmonalis. Further, this viscus appeared to have retained its original organic properties, only that its fibres were, here and there, separated by the interposition of a small quantity of melanose matter, and this, too, confined chiefly to within the eighth of an inch of its external surface. The membrane lining both the auricles and ventricles was perfectly healthy, and the large vessels had altogether escaped contamination.

It is to be regretted that we were not per-

mitted to examine the brain. On inspecting more closely the product of melanosis, it was found to possess an appearance very similar to that which the contents of a decaying *Lycoperdon*, or common puff-ball, would present, if rendered cohesive by the addition of a small proportion of liquid. It had a deep red-brown or chocolate colour; was slightly fibrous in texture, and when agitated in water or spirit, and suffered afterwards to rest, a part fell down, as a pulverulent sediment, having the colour and opacity described. The water received a deep tinge from it; the spirit was hardly coloured. This substance, in its most compact form, shewed a tenacity equal to that of the brain; and yielded, by expression, a small portion of a reddish fluid intermixed with fragments of the texture alluded to; but it had become reduced to a thin blackish or red-brown paste where the softening was completed. The softening was most decided in the centre of the largest tubera, and in these, the inner circumference of the cysts was fringed with floc-

culi of the melanose material, which were connected with it by means of a very fine cellular tissue; and this latter formed the bond of union between the cyst and its contents, under all circumstances. By the same medium the external surface of the cysts was united to the parts in which they were situated, and these, in a general way, admitted of being easily detached. The cysts did not present the slightest trace of vascularity, nor was there any visible turgescence in the vessels of the enclosing textures. M. Breschet has been at some pains to ascertain whether the melanose tubercle was truly organized; and with this view, he threw into the veins and arteries of the contiguous parts, some of the finest and most diffusible injections, without discovering any continuity of vessel between the cyst and the substance it contained, or any organization in the latter. He states the results of his experiments in these words:—“*Mon injection n'a fait que dénoncer des vaisseaux sur la membrane d'enveloppe et quelquefois il s'en est épanché dans*

la cavité qui s'est mêlée à la substance morbide."

From an analysis which he made of it, M. Barruel, a french chemist, thinks that the substance of the tumours in melanosis is a deposition of the colouring matter of the blood, and of fibrine, each under a particular modification and forming three different fatty substances. The first, soluble in alcohol, at a moderate temperature, and disposed to crystallize in brilliant scales ; the second, is soluble in alcohol at a boiling heat only ; the third is a fatty substance, in a fluid state, at the ordinary temperature of the air ; of a reddish colour, containing a large portion of the phosphates of lime and iron.

From a portion of the softened matter, after it had been kept some time in spirit, Dr. Henry obtained the following results, which, through his politeness, I am enabled to give in his own words :—

" 1st. By filtering through paper, much of the colouring matter remained on the paper,

and the colour of what passed through was much less intense.

“ 2d. Boiling does not destroy the colour, nor even when a little caustic potash has been added.

“ 3d. It is not changed by acids even when heated, except by nitric acid, which deprives it of its black colour, and turns it yellow.

“ 4th. A stream of chlorine passed through the liquid destroys the black colour, and throws down light fawn-coloured flocculi.

“ 5th. A few grains of corrosive sublimate stirred up with the fluid, precipitates the whole of the colouring matter, and leaves the supernatant liquid quite clear.

“ 6th and 7th. Nitrate of mercury, and muriate of tin, produce the same effect, but more slowly.

“ From these experiments it appears that the black matter is a peculiar secretion, analogous in some properties, especially in the 5th, 6th, and 7th, to the colouring matter of the blood. It would be necessary,

however, to repeat and extend the experiments on a larger quantity of the fluid, and in a more recent state, before any just conclusion can be deduced respecting its nature."

I have met with no instance on record, where melanosis prevailed so universally, and proceeded with such celerity, as in the case now offered to the notice of the profession. It appears to comprise nearly all the features which this rare and singular malady has been observed to assume in the different textures of the body; and exhibits, to a certain extent, the various modes by which it disorganizes or displaces those textures. I am induced to believe, however, on the authority of M. Laennec, that other forms of the morbid deposition are not uncommon: for besides the *encysted*, which we have seen developed in the parenchyma, and upon the surface of the viscera, or having, for its nidus, the interstices of the cellular and adipose textures, and what he, fancifully per-

haps, denominates the “*impregnating*” or *diffused*, in which the morbid matter is disseminated throughout the organs, and deposited between the particles of the natural tissue in the manner of dots or *striæ*, this distinguished pathologist has described the *unencysted*, by which is to be understood that the melanose substance exists in distinct masses, possessing no determinate form or volume, and adhering intimately to the parts in which they are situated, without the intervention of a cyst or capsule. He alludes also to another variety, which is characterized by the formation of a lamella of soft black adhesive matter upon the surface of the serous and mucous membranes, more particularly the serous, like the adventitious product which we daily witness as the result of active inflammation.

All these forms may exist in the same individual, and the three former even in the same organ ; but the *unencysted* has rarely been observed except in the cerebral, pulmonary, and hepatic structures.

It would seem that no tissue is free from the invasion of melanosis; yet it attacks some parts with an apparent preference, as is exemplified in the foregoing narrative. In its progress, however, like cancer, it involves, indiscriminately, the adjacent textures, supplanting and destroying all that might oppose a barrier to its ravages.* The osseous system even is not exempt from its influence; but the cancelli, especially of the spongy bones, appear to be more accessible to it than the other parts.

It is curious that melanosis is often co-existent with *Fungus Hæmatodes*, and that variety of fungoid disorganization denominated *Medullary Sarcoma*, as well as the

* Mr. Langstaff, who is well known as a zealous cultivator of pathological anatomy, and to whose kindness and liberality, on many important occasions, I am proud to acknowledge myself deeply indebted, did me the favour to point out a preparation, in which the contents of the orbit had been entirely converted into a melanose mass, and this extended through the foramen opticum to the corresponding hemisphere of the brain, of which a considerable portion was supplanted. The disorganizing process had probably commenced in the eyeball; but no traces of any of the tunics of this organ, or of the muscles naturally attached to it, remained.

simple Scrofulous Tubercls>, if we may credit the observations of Bayle. Sometimes the melanose matter is irregularly scattered and blended, in various proportions, with the fungoid mass; at other times it is organized in the form of distinct and perfect tubercles, in the viscus or order of parts affected with the medullary disease, of which there are some beautiful specimens in Mr. Langstaff's valuable museum.

There are some conditions of the excreted fluids which have been ascribed to the same cause, or contemplated as one of the forms of melanosis; but it seems to me very questionable whether they should be so classed; and as this branch of the subject has not yet been sufficiently investigated to warrant any positive deductions as to their identity, I shall content myself with barely alluding to it.

It is necessary to distinguish the morbid appearances of melanosis from the natural *black pulmonary matter* which is found more or less abundant in all adults, and which

appears to increase with age, sometimes to such an amount as to render the lungs nearly black. In this case, the permeability of the pulmonary tissue; the uniform dissemination of the black matter; its chemical composition; the deep grey or blue-black tint, which a section of it exhibits, in contra-distinction to the red-brown of melanosis, and the exemption of other textures, are characters upon which we may probably found a correct discrimination. In melanosis, not only is the substance of the lungs affected, and the black matter distributed *en masse*, or in an encysted state, but their coverings often participate, and shew the disease in a particular form, as will be seen by examining and contrasting Fig. 1 and 2, Plate VIII.

Melanosis is not peculiar to the human subject; the organic changes which characterize it have likewise been discovered in many kinds of animals, as the dog, the hog, the cat, the rabbit, the rat, and the mouse; but above all, the horse; and those which have white or grey hair appear to be most susceptible of it—a

fact which refers more particularly to the horse.

The researches of anatomists have advanced some steps towards the elucidation of the pathology of melanosis; yet much is wanting to complete its history, and determine the process, or series of vital actions, which are concerned in the production of phenomena, so peculiar as those which form the subject of the preceding description.

From the light which chemical analysis has thrown upon its nature, it has been, perhaps hastily, inferred, that the material constituting the distinctive character of this disease is the result *simply* of a secerent action of the original exhalant system; or in other words, an exudation of one of the constituents of the blood slightly modified in its transmission through the capillaries. But it seems to me that this opinion is hardly tenable, when we consider how entirely absent are the common signs of vascular congestion, or of that state which analogy would induce us to look for, in supposing the pre-existence of an increased

agency of the vessels. Indeed, the texture possessed by the melanose tumour, which, though not coming within the usual definition of an organized part,* presents a character very unlike *that* which would result from simple secretion or effusion, will furnish a decided negative to such a conclusion. I am inclined to believe that this substance is a true creation, and not extraneous as the matter of a tuberculous gland ; that it is not beyond the pale of a vital influence, but possesses, like many other tumours, an inherent power of growth and increase, controlled by laws, as yet mysterious and unintelligible, somewhat different, perhaps, from those which prevail over such diseases as present an unequivocal vascularity, and hence maintain a

* The most celebrated physiologists have entertained an idea that vascularity is essential to, and indeed synonymous with, organization ; but before we admit this belief, we shall be compelled to exclude a large proportion of the organic system from the privileges of life, since many parts of the living body are not endowed with vessels demonstrable to the eye. I should rather denominate *that* organized, which exhibits the properties and functions of vitality.

more dependant relation to, and intimate connection with, the surrounding structures.*

Melanosis is undoubtedly of a fungous nature, and being, not unfrequently, found in conjunction with other kinds of fungoid disorganization, especially the medullary, it has been contemplated as a variety only of the latter; and this opinion is countenanced by the circumstance, that tubercles have been observed possessing almost every possible intermediate feature, so as to render it difficult, at one point, to determine whether the melanose or medullary character was most prominent. The specimen represented in the 2nd fasciculus of Dr. Farre's splendid work on the "Morbid Anatomy of the Liver," appears to be of this kind. But if we take the extreme states of each disease, we shall discover differences of a very marked and striking character. In the anatomical structure of the

* Is there not some analogy, in the mode of formation, between these morbid fungi and the parasitic productions, so called, which are seen in both the vegetable and animal kingdoms?

melanose tumour, the paucity or entire want of vessels, constitutes a distinguishing peculiarity; while the medullary tumour, which invades the system as extensively, appears under the same forms, attacks the same textures, and eventually produces a like influence on the general economy, is as remarkable for the contrary state, namely, a luxuriant vascularity. Laennec observes, that the latter is "in general supplied by a great many blood-vessels, the trunks of which ramify on the exterior of the tumours, or between their lobes only, while the minuter branches penetrate the substance of the tumours. The coats of these blood vessels are very fine and readily ruptured; and this accident gives rise to clots of extravasated blood, in the interior of the tumours, sometimes of considerable size."—Now nothing of this kind was observable in any of the specimens of melanosis which I have examined; there was no extraordinary developement of arterial branches leading to the tumours—none visibly ramifying on the cysts or capsules which bound them; and

it would appear from the experiments of Breschet, which have been already noticed, that in no instance could vessels be distinguished in the morbid substance.

Then as to the local phenomena presented during life :—In the one case, if the tumour be at all advanced, there is pain, constant or occasional, more especially the latter, which is sharp and lancinating, and occurs at irregular intervals, and this is often accompanied with signs of low vascular excitement. In a further stage the suffering is increased : an ulcerated breach having been produced in the integuments, the tumour fungates and sloughs in turns ; it discharges an extremely offensive sanies, and occasionally hemorrhages to a considerable extent take place, which, for the time, relieve both the vascular and nervous irritation attendant on the progress of the disease. Lastly, the absorbent glands in the vicinity participate in the mischief, and the general powers become exhausted from the combined influence of pain, irritation and discharge ; unless, indeed, from constitutional

contamination, the disease fix on an internal part, and then death is accelerated, in a degree, commensurate with the importance of this part in the living system, and the interruption which arises to its functions.

Now, in melanosis, judging from the evidence of the case just related, if the growth of the tumour be not circumscribed by an unyielding texture, there is neither pain as a necessary concomitant, nor an excited state of vessels in the circumjacent structures; and, what I hold to be the most remarkable circumstances in the case in question, are the absence of vascular injection, and the apparent insusceptibility of the serous membranes of the chest and abdomen, distended and affected as they were, to accretion and union of their surfaces. As to several points of character in the melanose tumour, during the ulcerative stage, there seems to be a blank which must be left to future observation to fill up; but considering its low state of organization, and reasoning from the post-mortem appearances afforded in a solitary

instance, I should presume that many of the pathological changes which attend the career of hæmato-fungoid disease, will not be found to exist in melanosis.*

The process upon which the softening of the melanose tumour depends, is as inexplicable as the laws of its production and increase; but that it arises from a power inherent in the morbid structure, and *that* distinct from the common conditions of suppurative inflammation in other structures, is to be inferred from the absence of those agents, which support the latter, in the situation where the softening is first observable.

It might be imagined a priori that a dis-

* Since this sentence was written, I have perused some able remarks upon Melanosis by the eminent Mr. Wardrop, prefixed to his edition of the "Works of the late Dr. Baillie." This gentleman states, if I understand him aright, that he has observed the disease pursuing uniformly the same course, and *undergoing the same process of disorganization*, both in its primary and secondary forms, as *Fungus Hæmatodes*. Unless, however, the structure of the morbid growth become materially changed in its transition to the open ulcerated state, except in the compound or more equivocal varieties of Melanosis, I cannot conceive a strict parallel in the local *consequences* between the former and the latter.—It is with the greatest deference to the enlightened author referred to, that I submit this observation.

ease so remarkable in its anatomical relations, and co-existent in such a number of tissues, would exhibit signs by which its presence could be recognised during the life of the individual affected with it; but unfortunately, as in many other organic maladies which have their seat in parts concealed from our view, though better understood in some of their bearings, we can seize hold of no specific or pathognomonic symptoms which would enable us to pronounce upon the existence of melanosis when it attacks only the internal organs. In this case, there appears to be room hardly for a rational conjecture. If, however, with marks of visceral disorganization we have the developement of melanose disease in any of the external organs, then we may fairly, though not positively, infer the nature of the former.

A writer of considerable eminence, for whose opinions I entertain a high respect, has fixed upon the absence of febrile irritation as a distinguishing feature of the complaint, which, even if established, would not serve

as the ground of an unerring diagnosis; since the converse does not invariably hold in other derangements of structure: but that this is not a constant circumstance, is proved by the case related above, in which, toward the close, there was as decided a hectic as I have ever witnessed in Phthisis Pulmonalis.

As to the remote and exciting causes of melanosis we are quite in the dark, nor can more be said of the methodus medendi.

We are hence forced to confess the incompetency of our knowledge of the disease under consideration, and to leave to future investigators the merit of revealing the laws which govern its origin and progress, of determining the signs which exclusively denote its existence, and of pointing out the means by which its ravages may be prevented or repressed. If in any way I shall have contributed to incite the inquiry necessary for these ends, and the sum of human misery shall thereby be diminished, my object in submitting this humble performance to the public will be fully attained.

EXPLANATION OF THE PLATES.

PLATE I.

FIG. 1. Exhibits the external appearance of the eye a few days previous to extirpation; and FIG. 2. a section of the organ as already described. To the kindness of Mr. Wilson I am indebted for these very correct representations.

PLATE II.

Shews the appearance of melanose tubercles when occurring in the cutaneous and subcutaneous tissues. The darker spots represent the former, and the lighter blue the latter. Although the cutis forms the original matrix of the cutaneous tubercle as here delineated, yet it is not improbable, that, had the progress of growth in the subcutaneous tubercle been uninterrupted, it would have reached the surface and taken the character of the cutaneous in all but its dimensions.

PLATE III.

Exhibits an external view of the liver, and represents the tubera in the different stages of their growth and developement, as well as the altered character of the intermediate hepatic texture. The large tuber at the base of the figure was completely softened and the peritonæal covering was here slightly opaque. The different shades denote the relative approximation of the tubera to the surface of the organ, and the manner in which they coalesce is equally distinct.

PLATE IV.

Represents a section of the liver to shew the internal characters of the tubera. The hepatic structure is much altered from its natural appearance. In some situations the tubera are separate and the cyst perfect and remarkably distinct from the surrounding texture,—in the upper division of the figure, so much so, that it has been raised in some degree

from its bed. In others, the tubera have coalesced, and at the points of contact the cysts appear to have been destroyed, though distinguishable in the circumference of the mass. A little below the centre, an irregular ragged surface will be observed, which marks an intermixture of the melanose and hepatic textures, a state apparently circumscribed and limited as to space by the contemporary formation of a cyst. Above, one of the cysts has been emptied of its contents to display its cavity, the sides of which are fringed by small fragments of the melanose substance. Its dissemination is less abundant in this section, than in any other that was made of the liver.

PLATE V.

In this plate is exhibited a section of the kidney, which in its natural structure appears to have suffered more than any other viscus, the liver excepted. This is the more surprising as the tubercles are by no means considerable or numerous; and it becomes a question

whether the alteration in the tubular substance of the organ is directly a consequence, or merely a link in the chain of causation, of the tubercles. It must be observed, that wherever the melanose bodies are present, the natural division of the cortical and tubular structures has disappeared.

On the surface, immediately beneath the capsule, the tubercles had attained their largest growth; while the infundibula and pelvis of the kidney were almost free from deposition.

PLATE VI.

Represents a portion of the *intestinum ilium* with the mesentery attached to it, after it had been dried and preserved in spirits of turpentine. The darker vertical line indicates the divided edge of the mesentery. It is unnecessary to make any further observations than that the melanose spots are situated principally between the duplicature of the membrane, and that they were quite distinct from

the mesenteric glands which had undergone no visible change.

PLATE VII.

FIG. 1.—A part of the heart as it appears after maceration, and immersion in spirits. The surface is studded with melanose spots of various sizes, the majority of which are limited to the texture of the pericardium. Some, however, are beneath it, and the lighter shades indicate the deposit situated in the substance of the organ. Although the origin of the pulmonary artery is represented as if affected, yet its texture, strictly speaking, is exempt, the melanose granules being confined entirely to its pericardiac investment.

FIG. 2. is intended to represent a portion of the pancreas closely studded with melanose tubercles. The disease appears to have originated in the cellular texture uniting the lobules of which this organ is composed, and consequently the glandular substance has undergone little or no intrinsic change.

PLATE VIII.

FIG 1. Illustrates the disease as it affects the lungs. The surface has exchanged its natural colour for a light blue, in consequence of the dissemination of the melanose material throughout the pulmonary substance. Clusters of encysted tubercles are seen raised upon the pleura, and the manner in which they are attached is observable on the edge of the lung. In other situations they appear to have taken their origin in the texture of the membrane, and some are decidedly subjacent to it, —conditions which it is difficult to represent with the pencil. The divided surface displays the pulmonary tissue lightly interspersed with melanose matter, and, here and there, a tubercle may be distinguished.

FIG. 2. is intended to represent the natural *black pulmonary matter* referred to at page 33, and displays very accurately the appearance which the lungs assume when beset with it. In some places, it will be seen, there are deeper circular spots which might be mistaken

for melanose tubercles. But a careful inspection of the recent lung shews that even here the pulmonary tissue is permeable, that no hardness is perceptible to the finger, and that the depth of colour is evidently owing to an *unencysted* concentration of the same blue-black material which gives character to the other parts. The lighter surface on the lower division marks a loss of transparency in the pleura, which was bound to the thoracic parieties by adhesions apparently of old date. The individual, from whom the specimen was taken, was brought to me for dissection, and appeared to be about fifty or sixty years of age. He had died from caries of the spine, with psoas and lumbar abscesses.

THE END.

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ERRATA.

Page 44, line 7, for Peretonæal, read "Peritoneal."

Page 25, line 1, commence the sentence "On inspecting &c." as a distinct paragraph.

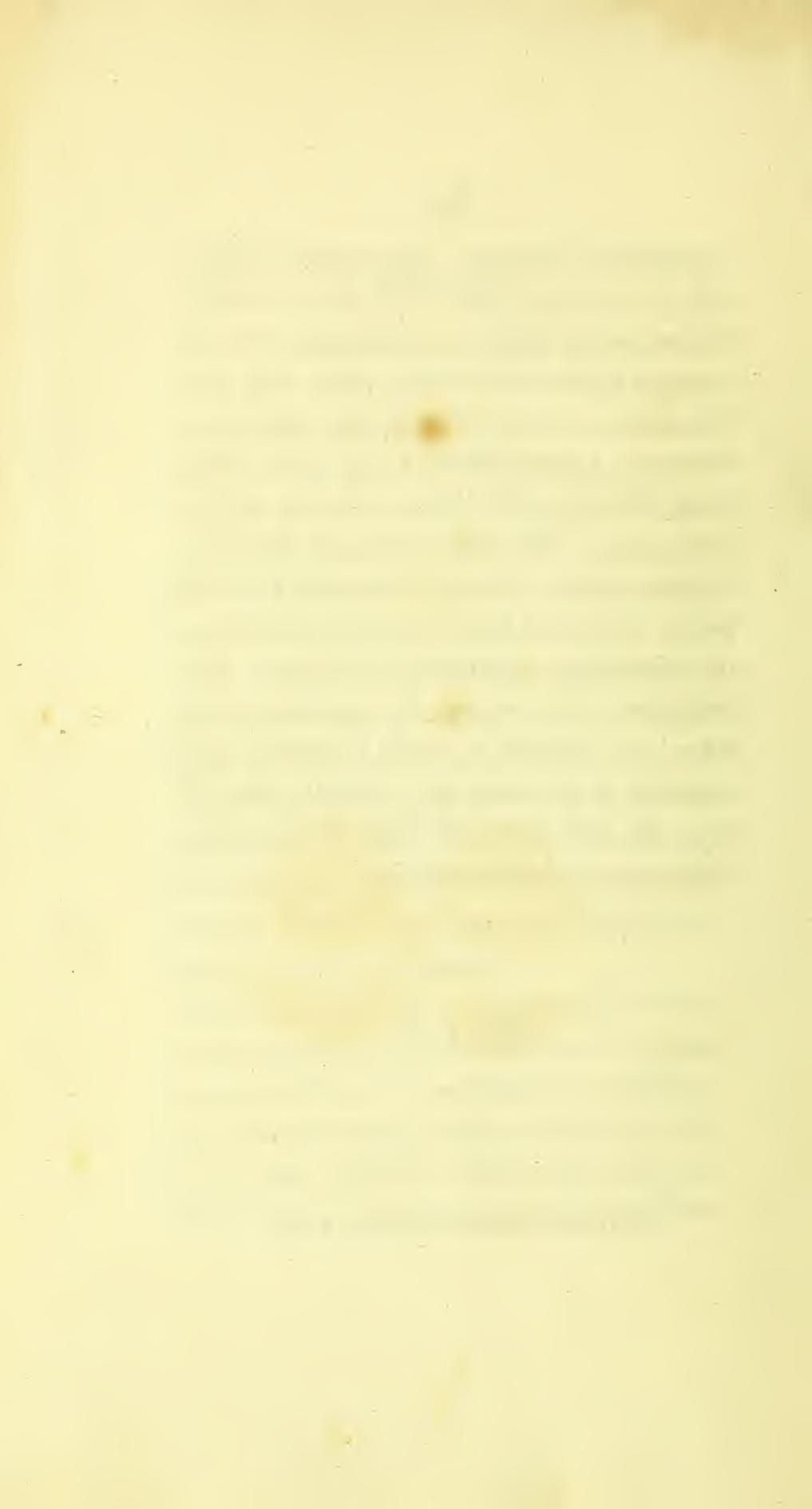


PLATE I.

Fig. 1



Fig. 2.

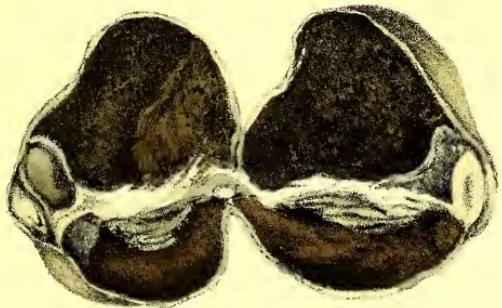




PLATE II.

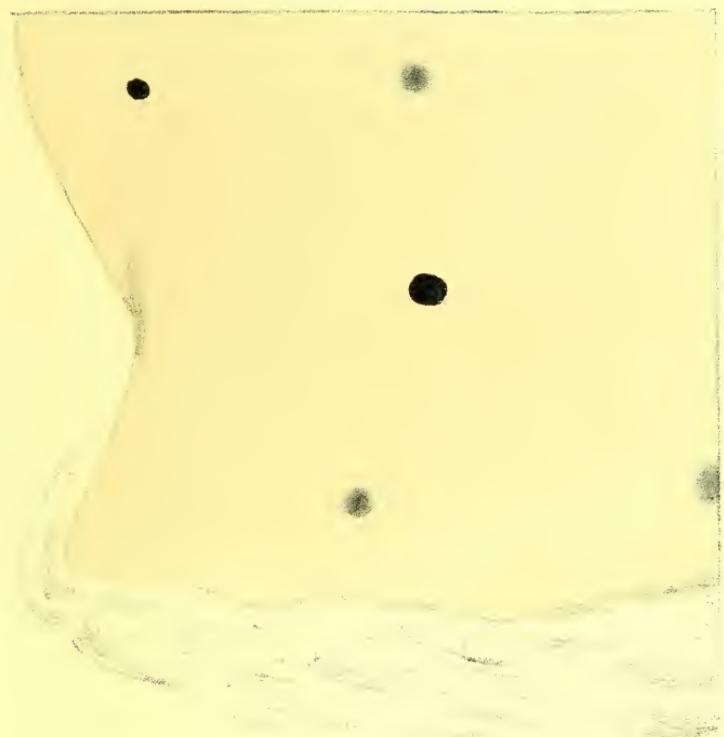


PLATE III.



PLATE IV.

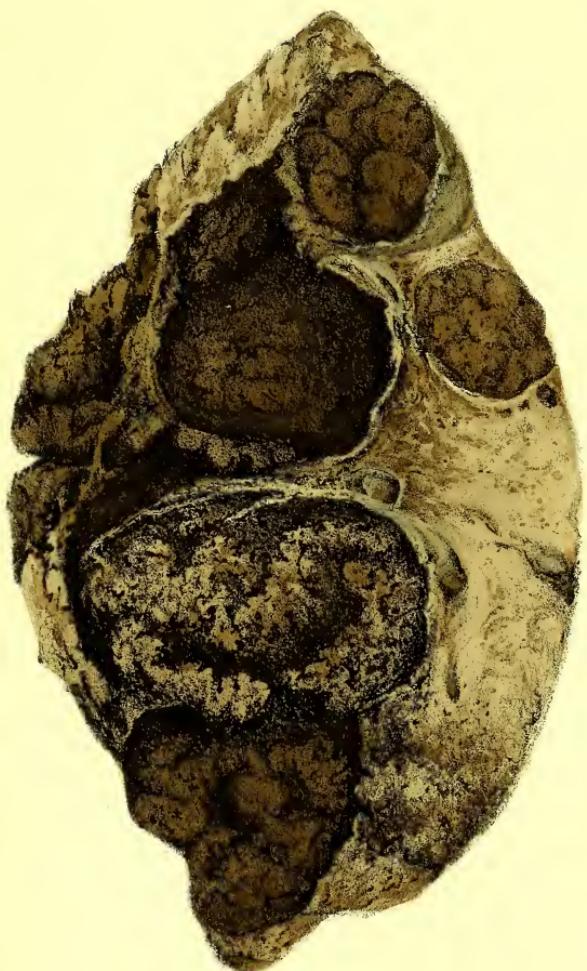


PLATE V.



PLATE VII.

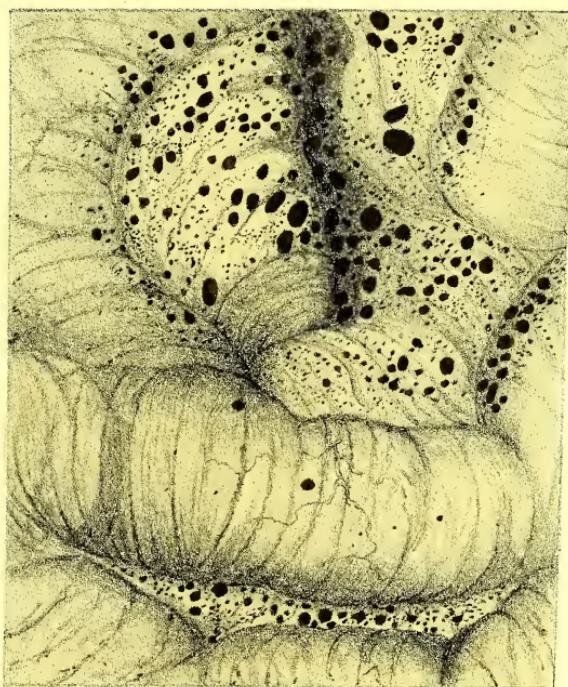


PLATE VII.

Fig 1.



Fig 2.

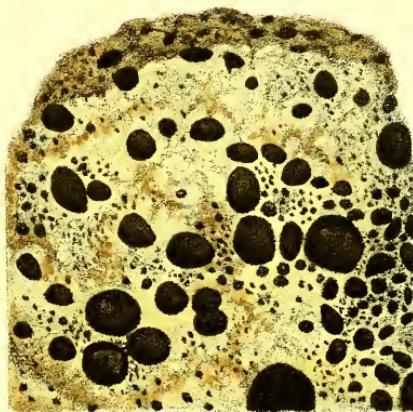


PLATE VII.

Fig 1.



Fig 2

